CLAIMS

What is claimed is:

1.   A method for dynamically processing data, the method comprising the steps of:

determining a sustainable data transfer rate between a data appliance and an external memory medium;

selecting a value for at least one operational parameter within the data appliance in response to the sustainable data transfer rate; and

processing data in accordance with the at least one operational parameter.

2.   The method of claim 1, wherein determining a sustainable data transfer rate between a data appliance and an external memory medium comprises transferring a test file between the data appliance and the external memory medium.

3.   The method of claim 1, wherein selecting a value for at least one operational parameter comprises identifying a data acquisition parameter.

4.   The method of claim 3, wherein processing data in accordance with the at least one operating parameter comprises acquiring and formatting image data.

5.   The method of claim 3, wherein identifying a data acquisition parameter comprises changing at least one of a value associated with spatial resolution and frame rate.

6.   The method of claim 1, wherein selecting a value for at least one operational parameter comprises identifying a data compression parameter.

7.   The method of claim 6, wherein identifying a data compression parameter comprises changing at least one of an indicator associated with a bit rate, a frame type, and a search area for motion vectors.

1   8.   The method of claim 1, wherein selecting a value for at least one

2   operating parameter in response to the sustainable data transfer rate comprises

3   determining a desired data transfer rate responsive to the sustainable data transfer rate.

1   9.   A data appliance, comprising:

2   an acquisition system configured to acquire data in response to an acquisition

3   parameter;

4   a processing system coupled to the acquisition system, the processing system

5   configured to transform data in response to a processing parameter; and

6   a memory interface coupled to the processing system, wherein the data

7   appliance configured to select a value associated with at least one of the acquisition

8   parameter and the processing parameter responsive to a sustainable data transfer rate

9   between the memory interface and an external memory medium.

1   10.   The appliance of claim 9, further comprising:

2   an internal memory configured to store a test file.

1   11.   The appliance of claim 10, wherein the memory interface is configured

2   to apply the test file to measure a sustainable data transfer rate.

1   12.   The appliance of claim 9, wherein the sustainable data transfer rate is

2   associated with a data write operation.

1   13.   The appliance of claim 9, wherein the sustainable data transfer rate is

2   associated with a data read operation.

1   14.   The appliance of claim 9, wherein the data appliance comprises a

2   digital camera.

1   15.   The appliance of claim 14, wherein the acquisition parameter

2   comprises one of spatial resolution and frame rate.

1   16.   The appliance of claim 14, wherein the processing parameter
2   comprises one of a bit rate, frame type, and search area for motion vectors.

1   17.   The appliance of claim 9, wherein the data appliance applies a
2   predetermined set of parameter values responsive to a range of sustainable data
3   transfer rates between the memory interface and an external memory medium.

1   18.   A system for responding to a data transfer rate, comprising:
2   means for determining a sustainable data transfer rate for data transfers to/from
3   an external memory medium coupled to the system;
4   means for acquiring a data stream;
5   means for transforming the data stream; and
6   means for selecting a value for at least one operational parameter associated
7   with the means for acquiring or the means for transforming the data stream in
8   response to the sustainable data transfer rate.

1   19.   The system of claim 18, wherein the means for acquiring a data stream
2   is responsive to at least one acquisition parameter.

1   20.   The system of claim 19, wherein the at least one acquisition parameter
2   comprises one of spatial resolution and frame rate.

1   21.   The system of claim 18, wherein the means for transforming the data
2   stream is responsive to at least one processing parameter.

1   22.   The system of claim 21, wherein the at least one processing parameter
2   comprises a video data compression parameter.

1   23.   The system of claim 22, wherein the video data compression parameter
2   comprises one of a desired bit rate, frame type, and search area for motion vectors.

1   24.   A computer-readable medium having stored thereon an executable

2   instruction set, the instruction set, when executed by a processor, directing the

3   processor to perform a method comprising:

4   retrieving a test file and an initial bit rate;

5   transferring the test file to an external memory medium responsive to the

6   initial bit rate;

7   determining if a data transfer error condition exists;

8   when it is the case that no data transfer error exists, recording the bit rate to

9   generate a sustainable data transfer rate;

10   when it is the case that a data transfer error exists, decreasing the bit rate to

11   generate an interim bit rate and repeating the transferring, determining, decreasing,

12   and recording steps.

1   25.   The computer-readable medium of claim 24, wherein retrieving a test

2   file and a bit rate comprises retrieving video data.

1   26.   The computer-readable medium of claim 24, wherein the data transfer

2   error comprises a write operation error.

1   27.   The computer-readable medium of claim 24, further comprising:

2   selecting at least one operational parameter in response to the sustainable data

3   rate; and

4   applying the operational parameter.

1   28.   The computer-readable medium of claim 27, wherein the operational

2   parameter is at least one of an acquisition parameter and a data compression

3   parameter.

1   29.   The computer-readable medium of claim 28, wherein the acquisition

2   parameter comprises one of spatial resolution and frame rate.

1   30.   The computer-readable medium of claim 28, wherein the data

2 compression parameter comprises at least one of a desired bit rate, frame type, and

3 search area for motion vectors.

1   31.   A computer-readable medium having stored thereon an executable

2 instruction set, the instruction set, when executed by a processor, directing the

3 processor to perform a method comprising:

4   retrieving a test file and an initial bit rate;

5   transferring the test file to an external memory medium;

6   retrieving the test file from the external memory medium responsive to the

7 initial bit rate;

8   determining if a data transfer error condition exists;

9   when it is the case that no data transfer error exists, recording the bit rate to

10 generate a sustainable data transfer rate;

11   when it is the case that a data transfer error exists, decreasing the bit rate to

12 generate an interim bit rate and repeating the transferring, retrieving, determining,

13 decreasing, and recording steps.

1   32.   The computer-readable medium of claim 31, wherein retrieving a test

2 file and a bit rate comprises retrieving video data.

1   33.   The computer-readable medium of claim 31, wherein the data transfer

2 error comprises a read operation error.

1   34.   The computer-readable medium of claim 31, further comprising:

2   selecting at least one operational parameter in response to the sustainable data

3 rate; and

4   applying the operational parameter.

1   35.   The computer-readable medium of claim 34, wherein the operational

2 parameter is at least one of an acquisition parameter and a data compression

3 parameter.

1   36.   The computer-readable medium of claim 35, wherein the acquisition

2   parameter comprises one of spatial resolution and frame rate.

1   37.   The computer-readable medium of claim 35, wherein the data

2   compression parameter comprises at least one of a desired bit rate, frame type, and

3   search area for motion vectors.

1   38.   A digital camera, comprising:

2   an image acquisition system configured to generate a video data stream;

3   a data processing system configured to receive and transform the video data

4   stream to generate a compressed data stream;

5   an external memory interface coupled to the data processing system and

6   configured to feed back a sustainable data transfer rate to one of the image acquisition

7   system and the data processing system.

1   39.   The digital camera of claim 38, wherein the image acquisition system

2   is responsive to at least one of spatial resolution and frame rate.

1   40.   The digital camera of claim 38, wherein the data processing system is

2   responsive to at least one of a desired bit rate, frame type, and search area for motion

3   vectors.

1   41.   The digital camera of claim 38, wherein the sustainable data transfer

2   rate is responsive to a data write operation.

1   42.   The digital camera of claim 38, wherein the sustainable data transfer

2   rate is responsive to a data read operation.